Introduction

Art schools have had a disproportionate impact on contemporary art culture and our built environment. A legacy of the 1851 Great Exhibition, the story of the state-funded Victorian art school reveals much about the revolutions that took place in nineteenth- and early twentieth-century art in Britain, modern theories of design, art pedagogy, and high-end economic production; what today we might call 'the knowledge economy'. Through design education, the 'masses' were permitted access to new ideas about urban life, redemption from the environmental catastrophe of the Industrial Revolution, and to a better, brighter future. This book documents the history of the Victorian art school, from its genesis in the complex of museum and studios at South Kensington to the construction of new schools in Manchester, Birmingham, and Glasgow; the legacy of which still shapes cultural life in these cities to the present.

It is not the explicit intention of this book to develop a thesis on political economy, municipal governance, nor changing definitions of culture – though these themes form part of the background to the central narrative. Neither is it a general survey of art schools or studios in this country or abroad. After considering the beginnings of the schools in the Department of Science and Art at South Kensington, it investigates three case studies in chronological order of construction; Manchester, Birmingham and Glasgow. The architecture of these buildings, and the details of the day-to-day life they accommodated, are revealed with the help of archival material, drawings, and photographs taken shortly after they were opened.

Other art schools secondary to the architectural narrative of this book have been excluded, but nonetheless merit further study. For example, the undecorated slender mullions and steel lintels of Leeds School of Art suggest a proto-functionalism reminiscent of Mackintosh's work in Glasgow – however this contrasts with the Queen Anne Revival red brick and stone of the rest of the building.[1] Herbert McNair and Frances MacDonald played a pivotal role developing a new practical art and crafts pedagogy at Liverpool School of Architecture and Applied Art, and its graduates exported its Beaux-Arts planning philosophy across the world. However the school was housed in a series of temporary "Art Sheds" in the quadrangle of University College, independent of the broader national network of schools established from South Kensington.[2] Other schools focusing on fine art, such as the Slade School of Fine Art and the Ruskin School of Drawing, grew out of established seats of learning, free from the auspices of the Department of Science and Art and its focus on the application of practical art or design to industry. They were often accommodated ad-hoc in buildings that formed part of a larger educational campus.[3]

Manchester, Birmingham, and Glasgow have been selected as they were the first, and arguably the most successful, of the large schools that opened outside of London in this period. They were housed in buildings in what were the most environmentally degraded industrial cities in Britain – if not the world – at that time. This book approaches each building through the lens of a specific theme; beginning with the search for an appropriate architectural language to represent the ambitions of the new school in Manchester; examining the importance of daylight for the creation and display of art in Birmingham; and examining the role of new environmental technology in forging a new architectural relationship to the climate of the city in Glasgow.

The first chapter will examine the social and environmental context of the industrial cities of the north of Britain, largely untouched by the established art institutions of the capital. At this time Manchester, Birmingham, and Glasgow were emerging from a period of unparalleled physical, political, and cultural change. New forms of local government were established to order and 'improve' the living and working conditions of new populations of hundreds of thousands of inhabitants.

The improvement of these cities provided opportunities for integrating architectural, civic, and social goals, and the shaping of a distinctive regional identity in relation to the capital. A carefully narrated chronology of the past would be allied to a contemporary concern for the health of the urban economy, not only in terms of industrial output but also of 'culture'. Improving the environment of the city and promoting the role of art in reshaping society went hand in hand, and 'culture', interpreted in different ways, was the process by which a physically and metaphorically cleaner and brighter future could be brought about after the tumult and upheaval of the Industrial Revolution.

The second chapter describes how technological developments in lighting and optics fundamentally changed art practice at the end of the eighteenth century. More powerful sources of light permitted larger groups of artists to work together on the same subject, establishing the culture of the studio class that we are still familiar with. However, the art revolutions that would occur in the nineteenth century cannot be ascribed to lighting technology alone. It is also important to understand the economic and administrative events that led to the state-sanctioned expansion of art education across the country.[4] The founding of the Schools of Design in 1837 led to the establishment of a 'bureaucracy of beauty' at South Kensington, led by Prince Albert's favoured civil servant Henry Cole.[5]

Cole's vision of a unified national institution was realised in the first purpose-built studio complex, linked to the Museum of Manufactures at South Kensington by the lavish West Staircase (Figure 1.1). The schools were intended to act as a cohesive instrument of government policy, disseminating the right sort of artistic training necessary for economic progress, and overseeing standards of teaching. Detailed instructions were published describing what the new Department of Science and Art regarded as the correct spatial brief for art schools in other cities. The dry practicality of this brief, and

the schedules of approved furnishings and fittings, prevented the boards of provincial schools from justifying any expenditure in terms that asserted their own priorities.

The third chapter will extend the London-centric history of the administration of the schools by examining the role local politicians and businessmen played in supporting new provincial branches. It examines the arguments that were advanced in the speeches and public meetings that accompanied the fundraising for a new art school building in Manchester, and examines the motivations of the speakers who offered their support, including their aspiration to improve civic life through the development and dissemination of a local art culture, differentiated from the offer of South Kensington. Allying the promotion of 'noble art' with a belief in the perfectibility of the environment, local politicians challenged the limited objectives of central government to address the needs of industry. The broader 'trickle down' effect of extending art education to all was critical for the reformulation of a sustainable local economy, and by extension a cleaner, brighter, improved city.

With a limited budget, much debate ensued as to whether the appearance or the function of the new building should be prioritised. Visiting in 1877, Henry Cole told the Management Committee in Manchester: 'I hope you will allow the stern necessities of a School, and common sense, to have the first consideration in its construction'. Architect George Tunstal Redmayne promised, however, to design a building that 'will also possess architectural features worthy of the object and of the period'. These tensions would be set in stone in the façade of the new school, adjoining Richard Lane's Doric Town Hall of 1830 (Figure 1.2).

Arguably what distinguishes the art school from the train shed, or the Great Exhibition building, or other new Victorian building types such as schools and hospitals, is its architectural rather than engineering programme. It is a building concerned with atmosphere, and the symbolism of light and its visual impression were clearly design criteria equal to – if not more important than – the quantitative criteria of science.

The fourth chapter therefore explores how the design of Birmingham School of Art was resolved and refined through changes made to the scale and form of the building, in particular carefully proportioning and orientating the studios to receive the right kind of daylight (Figure 1.3). The transparency offered by the extensive use of glass broke down barriers not only to light but also space, changing the relationship between the individual and the public.[6] As daylight acquired new significance, new artificial lighting technologies also enabled a social revolution: at home, in the workplace, and in education. To understand the impact of this revolution it is necessary to be specific about what light was being used for, when, and where – the 'tacit perceptual practices' that were 'deeply embedded in habitual, daily routines'.[7]

This book aims to contextualise these transformations in the use of glass, daylight, and artificial light

within a building type unambiguously concerned with vision and illumination in the production and dissemination of art culture. By framing the significance of the respective roles of central government, civic leaders, philanthropists, and other reformers in extending their vision of culture as project to a wider audience, it is possible to assess the impact of new ways of seeing not only on 'working-class self-recognition and the maturity of the educated artisan', but on the wider transmission of civic identity to the whole city.[8]

The fifth chapter examines how in Glasgow the advances realised in Manchester and Birmingham were combined with Charles Rennie Mackintosh's gift for spatial invention, and a radical mechanical heating and ventilation system, to create an entirely new kind of 'tempered' environment unprecedented in its sophistication (Figure 1.4). The architecture (and environmental systems) of Mackintosh's school can be read as a metaphor for the wider transformation of Glasgow from a dark, polluted, industrial powerhouse into a culturally refined city.

The book concludes by examining the impact of the new art school buildings on their wider urban environment. Their lofty spaces demonstrated an unprecedented faith in technology, ventilated by fresh air circulated abundantly and illuminated by copious amounts of 'clean', bright daylight. The construction of the highly specialised internal environments of these buildings (and the new technology that maintained them – electric light and sophisticated new combined heating-and-ventilation systems) demonstrated an unparalleled integration of social, economic, and environmental goals that had wider political and even moral implications.

In the art school the ambitions of art education and early building science began to justify new ways of structuring architectural space. In challenging the traditional solidity and 'massiveness' of Victorian buildings, art schools were prescient of the modernist desire to elide boundaries between inside and out. Embracing both the functional necessity and the architectural potential of new technologies such as plate glass, electric lighting, and mechanical ventilation, the schools exploited advances in building science to ameliorate the worst aspects of the indoor environment, combined with a unique Arts and Crafts sensibility to the nature of the site. The art schools acted as 'beacons of enlightenment', demonstrating the possibilities of the diffusion of art in a rapidly transforming urban society.

Context is incredibly important to this narrative. The industrial city of the first half of the nineteenth century was a dark and crowded place. Oppositions and dichotomies abounded; of social upheaval and disorder amidst the monotonous day-to-day, hand-to-mouth existence of the population, juxtaposed against the contradiction of a sun that did not provide any light, and a day that blended into night without any distinction, such that it was impossible to 'escape in the somber half-light of these streets'.[9] Before moving on to consider the schools themselves it is therefore important to

understand this context, and the environmental degradation experienced as a result of over a century of untrammelled growth.

The environment of the city

The visions of the Victorian city conjured by writers such as de Tocqueville, Southey, Carlyle, and Ruskin still provide a convenient rubric through which the emergence of the modern period can be understood. Out of the chaos, environmental devastation, and industrial power – or, to employ another term, Pandemonium – that characterised the nineteenth-century city grew the world's first true technological society. Literally and metaphorically from the darkness came light, and with this idea came the notion of modernity as an emancipation of society from the past. However, with the benefit of hindsight it is very easy to overlook the real sense of trepidation that existed concerning the unrestrained growth of the city and urban populations living outside of established supervisory mechanisms at the beginning of the nineteenth century. The French Revolution had revealed what the consequences of a failure to tame the urban environment might be.

The 1835 Municipal Corporations Act represented the first nationwide legislative attempt to control the growth of cities. It permitted city corporations to take responsibility for issues previously dealt with on an ad-hoc basis by local improvement commissioners, who dealt only with the symptoms of environmental degradation; 'nuisances' such as blocked drains, the obstruction of streets by waste material and household rubbish, and the prevention of 'noxious emanations' through the maintenance of makeshift sewers. More draconian interventions had to be addressed by one-off local Building Acts, such as the London Building Act of 1774. This meant that problems such as derelict buildings were considered in isolation from each other, and independently from the maintenance of infrastructure. Wholesale urban planning was considered to be an unnecessary expense that the state could ill afford – and so the causes of chronic environmental problems were not addressed.[10]

Light was also in short supply. The expansion of industry and the extension of factory hours impacted on the pollution of the atmosphere already worsened by the technological revolution of improved distribution of fuel, and advances in the scale and efficiency of combustion engines, which were replacing water as the dominant source of power.[11] In 'Letters from England', the Poet Laureate Robert Southey described the consequences of newly established industry on the cities and surrounding countryside of Birmingham and Manchester at the beginning of the century:

> The noise of Birmingham is beyond description; the hammers seem never to be at rest. The filth is sickening… it is active and moving, a living principle of mischief, which fills the whole atmosphere and penetrates everywhere.

The effects of the industrial city extended far and wide across a scorched landscape (Figure 1.5). Southey describes the road on leaving Birmingham for Manchester:

> Every where round us … the tower of some manufactory was to be seen in the distance; vomiting up flames and smoke, and blasting every thing around with its metallic vapours … The face of the country as we advanced was more hideous than can be described, uncultivated, black, and smoking.[12]

Daily life in these cities was shaped by the clockwork operation of industry. Factories with adjacent dormitories ensured the continuation of the sleep-work-sleep cycle of the great majority of the population. Political economy and the growth of Britain's empire overseas were the main arguments in defence of the horrors of the new mega-cities. There was no overriding vision, however, of how the city might reform once capitalist hegemony was achieved. Would improvement to the conditions of the working poor then come about as naturally as the development of the factories?[13]

The largest obstacle to the improvement of housing conditions was the necessity for as many working hands to live as close to the workplace as possible, resulting in an urban form of narrow dense back-to-back streets, as Southey described in Manchester:

> The dwellings of the labouring manufacturers are in narrow streets and lanes, blockaded up from light and air … crowded together because every inch of land is of such value that room for light and air cannot be afforded them. Here in Manchester a great proportion of the poor lodge in cellars, damp and dark, where every kind of filth is suffered to accumulate, because no exertions of domestic care can ever make such homes decent.[14]

The French journalist Leon Faucher complained that Manchester 'is distinguished neither by those contrasting features which mark the cities of the Middle Ages, nor by that regularity which characterises the capitals of recent formation. All the houses, all the streets, resemble each other; and yet this uniformity is in the midst of confusion.'[15] He marked out the area around Oxford Road for special derision, describing the meteorological phenomena of the 'fogs which exhale from this marshy district, and the clouds of smoke vomited forth from the numberless chimneys'.[16]

Quantifiably, the effects of smoke pollution are illustrated by the smoke charts developed by Max Ringelmann in Paris in 1890, and introduced to Britain by the turn of the century (Figure 1.6).[17] According to one source, the average loss of light at any given time in the worst-affected regions of Britain was 45 percent.[18] This would have been much worse in cold and humid weather conditions and temperature inversions, and would have been significantly worse indoors without regular cleaning of windows. Charles Dickens's atmospheric descriptions in *Bleak House* describe the impact of pollution on London's climate.[19] However, it was clear that the problem was much worse in the

industrial cities of the north, where houses were packed back-to-back together with factories and warehouses. One study from the beginning of the twentieth century recorded an annual soot fall in the centre of Glasgow of 820 tons per square mile, compared with 426 tons in London.[20]

The relative financial security afforded to workers by factory life was accompanied by social and environmental poverty. Dickens describes this cold, dark, and stale world in his fictional northern industrial city of 'Coketown'. Sometimes accredited to Preston or Manchester, the town is a scathing condemnation of the impact of industry on urban existence:

> It was a town of machinery and tall chimneys, out of which interminable serpents of smoke trailed themselves for ever and ever, and never got uncoiled. It had a black canal in it, and a river that ran purple with ill-smelling dye, and vast piles of building full of windows where there was a rattling and a trembling all day long, and where the piston of the steam-engine worked monotonously up and down, like the head of an elephant in a state of melancholy madness.[21]

Dickens's vision of 'serpents of smoke' can be read as a metaphor for the moral bankruptcy of the industrialists, while the allusion to wild beasts foretells Patrick Geddes's later evocation of the city as a living being, albeit one in captivity to a darker force. Dickens goes on to describe day-to-day life in the town:

> It contained several large streets all very like one another, and many small streets still more like one another, inhabited by people equally like one another, who all went in and out at the same hours, with the same sound upon the same payments, to do the same work, and to whom every day was the same as yesterday and tomorrow, and every year the counterpart of the last and the next.[22]

The overriding impression is of an undifferentiated, disorientating spatial hierarchy, characterised by a rhythm of circadian monotony (Figure 1.7). All the buildings looked alike, including the School of Design, which Dickens also deplores for its servitude to industry:

> The jail might have been the infirmary, the infirmary might have been the jail, the town-hall might have been either, or both or anything else, for anything that appeared to the contrary in the graces of their construction. Fact, fact, fact, everywhere in the material aspect of the town; fact, fact, fact, everywhere in the immaterial. The M'Choakumchild school was all fact, and the school of design was all fact, and the relations between master and man were all fact, and everything was fact between the lying-in hospital and the cemetery, and what you couldn't state in figures, or show to be purchasable in the cheapest market and saleable in the dearest, was not, and never should be, world without end, Amen.[23]

While Coketown is a literary invention, it emphasises the scale of the new civic project on which reformers were about to embark. The architecture of these cities was plain and uninspiring, laden in dirt that would render anything decorative remarkable only for the speed in which it too would be overcome with soot, and acquire the facelessness of the rest of the street. In this context it is hardly surprising that early attempts at civic architecture – often a Town Hall – adopted an overstated and extravagant classical language (Figure 1.8).

The notion that familiarity rendered circumstances that would have previously elicited shock or outrage invisible also lies at the heart of Ruskin's description of the modern city:

> Our cities, built in black air which, by its accumulated foulness, first renders all ornament invisible in distance, and then chokes its interstices with soot; cities which are mere crowded masses of store, and warehouse, and counter, and are therefore to the rest of the world what the larder and cellar are to a private house; cities in which the object of men is not life, but labour; and in which all chief magnitude of edifice is to enclose machinery; cities in which the streets are not the avenues for the passing and procession of a happy people, but the drains for the discharge of a tormented mob, in which the only object in reaching any spot is to be transferred to another; in which existence becomes mere transition, and every creature is only one atom in a drift of human dust, and current of interchanging particles, circulating here by tunnels underground, and there by tubes in the air; for a city, or cities, such as this no architecture is possible – nay, no desire of it is possible to their inhabitants.[24]

The city of discharge drains and rivers of humanity flowing like waste is not just an indictment against environmental catastrophe: it is a condemnation of social injustice that reflects the absence of a shared culture. Ruskin argued that 'no great arts were practicable by any people, unless they were living contented lives, in pure air, out of the way of unsightly objects, and emancipated from unnecessary mechanical occupation'.[25] The plentiful supply of natural light was essential for 'healthy and ennobling labour' since;

> It is the final act and outcome of lowest national atheism, since it cannot deny the sun, at least to strive to do without it; to blast the day in heaven with smoke, and prolong the dance, and the council, by night, with tapers, rejoicing – Dixit insipiens in corde suo, non est Sol [The fool has said in his heart, there is no sun].[26]

Ruskin's theme is reminiscent of Thomas Carlyle's 1843 report on Glasgow, where he describes 'scenes of woe and destitution and desolation, such as, one may hope, the Sun never saw before in the most barbarous regions where men dwelt'.[27] When Carlyle was writing the centre of Glasgow was still defined by the medieval Tolbooth at Glasgow Cross – the heart of the city – surrounded by

countless narrow and dark closes and 'wynds'. 'Old Glasgow' constituted an area of around 88 acres and a population of over 50,000, a density of at least 570 persons per acre, unrivalled in Europe at the time.[28]

In 1844, Robert Perry, President of the Faculty of Physicians and Surgeons of Glasgow, published a report addressing the outbreak of typhus fever in the city. While Dr Charles Nicolle did not discover the precise method of transmission of 'epidemic' typhus (by lice) until the 1920s, Perry correctly attributed it to poor hygiene and overcrowding.[29] Building on Perry's work, Glasgow's medical officer, Dr. Gairdner, presented evidence that showed a clear correlation between population density and death from disease, specifically typhus and cholera epidemics in 1849–50, 1853–54, and 1863–64.[30] Alongside architect John Carrick, Gairdner drew up plans for the restructuring of the Old Town. The initially unpopular Police Act of 1862 and the groundbreaking Glasgow Improvements Act of 1866 enabled the Corporation to impose strict planning rules that went so far as to define the widths and heights of the streets.[31]

National legislation followed. The Artisans and Labourers Dwellings Act of 1868, passed shortly after the second Reform Act of 1867, set the scene for the far more wide-reaching Artisans' and Labourers' Dwellings Improvement Act of 1875, which permitted the clearance of large areas of slums in English cities for the first time, along with borrowing powers from central government to pay for replacement housing.[32] But slum clearance was about more than tackling the abysmal housing conditions of the poor, with all its consequential health implications. For the first time, civic leaders such as Abel Heywood in Manchester or Joseph Chamberlain in Birmingham could reshape the city to fulfil their own visions of the future.[33]

Urban improvement

The economic forces that drove the transformation of industrial cities were first seen in Manchester in the 1830s and 1840s, as the owners of the factories and mills retreated from the pollution of the inner city to live on the edge of the countryside. This left a central commercial area surrounded by a pattern of factories and housing for workers, with an expanding outer ring of suburban villas.[34] Writing in 1844, Engels described how

> The town itself is peculiarly built, so that a person may live in it for years, and go in and out daily without coming into contact with a working-people's quarter or even with workers … This arises chiefly from the fact, that by unconscious tacit agreement, as well as with outspoken conscious determination, the working people's quarters are sharply separated from the sections of the city reserved for the middle-class.[35]

This segregation left an uninhabited centre that could easily be appropriated as a daytime public civic space: the phenomenon of 'an empty, functional heart'. The insanitary conditions of the surrounding slums provided a useful and virtuous justification for their clearance. Such acts were often motivated by an ideologically utilitarian belief that economic growth could only be attained through the construction of new railway lines and commercial districts chiefly serving the needs of the middle and upper classes.[36]

The boundary of the commercial centre in Manchester was roughly denoted by the location of the main line railway termini.[37] In 1836, William Fairbairn proposed the first large-scale redevelopment, with the remodelling of Piccadilly as a grand crescent along the northern side of a new public square. A less ambitious plan was executed in the 1850s, with concerns that the proposed square would encourage beggars and peddlers. A public space of appropriate splendour for the most important city institutions was eventually provided with the development of Albert Square to the west; a setting of sufficient grandeur for the new town hall designed by Albert Waterhouse, completed in 1877 (Figure 1.9).

Improvements continued apace with the clearance and reconstruction of Deansgate, beginning in 1869, and its transformation into the most 'fashionable thoroughfare' of the city by the 1880s (Figure 1.10).[38] According to one writer, by 1861 Manchester was 'a more interesting city to walk over than London':

> One can scarcely walk about Manchester without coming across frequent examples of the *grand* in architecture. There has been nothing to equal it since the building of Venice.[39]

As medieval slums were replaced by Palazzo-style warehouses, wealthy merchants 'saw themselves as latter-day Gonzagas or Medici', transforming the 'cramped and dingy feel of the city centre into a handsome and cosmopolitan place', albeit changed 'from the public city, ordered, open and permeable to the private city, closed, introverted and domestic'.[40] The example of the warehouse illustrates this – a building for storage, inaccessible to the street.

But 'improvement' also extended the purpose of civic reform from a utopian vision to the day-to-day minutiae of what was required to keep the city in good order. The streets and middens were to be cleaned, disease expunged, and the sky cleared of soot, in order to improve the public face of the town. In his *History of the Corporation of Birmingham*, John Thackray Bunce describes the daily rounds of the workers who would realise this all-encompassing vision:

> A little army of scavengers issues from the wharves and yards of the Public Works Department, to cleanse the streets from dirt and refuse, to water them, to repair the roadways and footpaths, and thus to render the preventive services of removing matters

> that would otherwise pollute the air and engender disease. Side by side with these diligent workers the staff of the Health Department begin their task. Throughout the night and in the early morning they have been engaged in removing the excreta and dry refuse from the houses, and conveying such matters to the furnaces at Montague Street, where, rendered harmless by fire, they are made to yield a useful constituent of manure. Now, another set of men belonging to the same department take their turn of labour. These are the inspectors of nuisances, who visit the courts and houses, cleanse and repair the drains, search out causes and cases of infectious diseases, remove patients requiring isolation, whitewash foul dwellings, examine suspected wells, watch the smoky factory chimneys, and report to their chief, the Medical Officer, all that is likely to affect the health of the population …
>
> The children, too, are going to school – over fifty thousand in the total, over thirty thousand of them in the public schools, managed by the town itself. As work becomes fatiguing, or as leisure serves, the parks, the gardens, and the baths offer means of pleasant recreation and healthful physical refreshment. For intellectual culture the news rooms and libraries, within easy reach of all quarters of the town, are open free to all comers, without distinction of age or sex, from morning till night, crowned by the great Reference Library, with its seventy thousand volumes, and allied with the Gallery of Art, soon to be extended on a scale adequate to the needs of Birmingham, and to be connected with a Corporate Public School of Art. As night draws on, the round of work is completed by nearly two thousand sturdy toilers, whose regular labour ensures our gas supply, and the burgesses have the satisfaction of knowing that they are making profit by the lights which gleam along the two hundred miles of streets and roads, and illuminate the tens of thousands of factories, and shops, and dwellings.[41]

In Birmingham this new municipal spirit of action came to be known as the Civic Gospel. There was a genuine zeal for political change as a result of the sheer magnitude of growth the new industrial cities of the north were experiencing. The various Improvement acts of the late nineteenth century, and the new municipal domains that resulted, can be viewed as an attempt to comprehend and order this phenomenon. There was, however, no legacy of major civic institutions concerned with governance that could act as a stage-set for the playing out of public life. The stage had to be created afresh. The result was the revitalisation of governance in the face of commerce, and the provision of municipal buildings and services for the 'improvement' of the wider population.[42]

The development of the centre of Birmingham came later than that of Manchester, but was altogether on a grander scale. Between 1865 and 1890 Birmingham altered so significantly that it would become emblematic of civic life right across late Victorian England, as Manchester was symbolic of the

earlier decades of Victoria's rule.[43] Birmingham's mayor, Joseph Chamberlain, was unusually concerned about the architectural legacy of the city for which he was responsible, comparing the city to the medieval city-states of Italy and northern Europe, whose guardians had 'left behind them magnificent palaces and civic buildings – testimonies to their power and *public* spirit and munificence'.[44]

Joseph Chamberlain turned to the Ruskinian architect J. H. Chamberlain in order to realise his vision for the city. Chamberlain's work included the new Central Library and Chamberlain's own house, Highbury Hall. His goal was to legitimise in stone the Corporation's view of itself as rightful heir to the grandeur of the powerful city-states of the Middle Ages. The centrepiece of this vision was the construction of Chamberlain Square and the new Council House, completed in 1879 for £163,000. However J. H. Chamberlain lost out in the competition for the building to Yeoville Thomason, whose clunky neo-classical design, alluding to universally recognised architectural triumphs of the past, was considered more appropriate to the contemporary fashion for Gothic (Figure 1.11). An extension housing the new Museum and Art Gallery was completed in 1885 (Figure 1.12)

In Glasgow the City Improvement Trust ordered slums to be cleared and streets widened so that fresh air could penetrate into the heart of the murk, and also provided for the construction of lodging houses for migrant workers. The Trust oversaw the construction of much of the distinctive grid-iron plan to the west of the city, the greatest planned expansion in Britain in the Victorian era. It paid no heed to the topography of the city, extending over the top of Blythswood and Garnet hills, and in so doing establishing the position of the main thoroughfares of the new city centre. From Glasgow Cross, Argyll Street ran west to the south of Blysthwood hill, Buchanan Street lay to the east, and Sauchiehall Street to the north, in the valley between the Blysthwood and Garnet hills (Figure 1.13).

In section, the height of the buildings reflected the topography – the main streets were lined by four, five and six storey offices and department stores, while the streets over the hills were composed of two and three storey townhouses, offering refuge from the foul air and noise of the streets below, and the industrial areas and workers' housing lying to the south and east. This arrangement was assisted by the prevailing westerly winds that carried smoke away to the east, further defining the environment of the city along economic lines.[45]

As the streetscape was changing, so was the architecture. Solutions to environmental problems were integrated with new types of public building giving rise to novel architectural possibilities.[46] Arts and Crafts environmental principles permeated the city through the works of architects such as Smith and Brewer, Charles Holden, W. H. Townsend, and of course Charles Rennie Mackintosh.[47] At the same time, the symbolic union of art and science – or craft and industrial production – allowed for the accommodation of radical technological solutions, including plate glass, electric lighting, and mechanical ventilation.

A municipal awakening

If the new infrastructure and public services were to be maintained, a new constituency of industrialists and civic leaders had to be brought together who could sustain the new institutions that would represent local government. The extension of the franchise would lead to a revolution in civic life. As ideas of what was *for* the public, and what *belonged* to the public changed, a new concern arose for the provision of services to all citizens, leading to the invention of new municipal institutions that would continue to shape society into the twentieth century.

The sweeping changes occurring in Manchester, Birmingham, and Glasgow resulted in a complex situation where more or less willing accomplices were working together to reconfigure the shape and governance of the city. The Long Depression of the 1870s had underlined that the fate of all classes was inextricably entwined, and had fuelled debate in city corporations about how urban renewal might appropriately be financed by the public purse. The Municipal Corporations Act of 1882 granted the right for corporations to take over the running of public services – and invest the profits in the construction and maintenance of what could be considered an embryonic welfare state. This was an evolution of earlier efforts to lobby Westminster for state support, founded more upon alleviating the symptoms of pressing problems. The Second Report of the Royal Sanitary Commission of 1871, for example, pressed central government to give local government outside of the capital more legislative authority and resources to tackle public health crises, in particular the regular outbreaks of infectious disease that blighted the more insalubrious districts of the industrial cities.[48]

The public health agenda was often exploited by local Corporations to gain the powers that were necessary to construct the institutional structures that they believed were a fair recompense for the meticulous governance they were undertaking. Following the 1882 Act, schools, hospitals, libraries, police and fire stations were built at an unprecedented rate, and water and gas networks were taken over and maintained by local government. To support this investment in infrastructure further central government assistance was obtained by lowering interest rates in the Public Works Loan Acts of 1853 and 1897. Repayment periods on loans for the construction of public buildings were extended from 20 to 30 years – and for the purchase of land to 50 years – long enough that the burden was spread beyond the career-span of most active public servants.[49]

Economically, the cost of the transformation was staggering. In 1877 and again in 1878, Birmingham Corporation took out consecutive loans of over a million pounds to fund civic improvements, much to the concern of central government.[50] 1.Table 1.1 illustrates the extent of the Corporation's borrowing and the breadth and range of civic projects it was undertaking by 1884.

Eventually the Corporations – financially secure insofar as the risk of monetary default was deferred to the future – could bestow time and money on what might otherwise have been considered frivolous – art and culture.

Taking the country as a whole, between 1890 and the beginning of the First World War over 200 museums and art galleries were constructed.[51] These new institutions, open predominantly during the day, formed an appropriate architectural setting for the wealthier classes of society to 'promenade' – to see and be seen.[52] Culture and its physical embodiments – the buildings that housed its institutions, the art it produced, and so on – became highly individualised symbols of power for those who paid for them. However, this power depended on the benevolence of local power brokers and, just as importantly, the buildings themselves – in treating art education as a civic matter – were expected to act as social condensers open to members of every class of society.

The development of the civic realm in the late Victorian city is the story of the making and breaking of the rules that governed not only 'style' but 'civicness', as whole areas of city centres were levelled and rebuilt by a liberal elite taking advantage of a deluge of credit available in the boom years, effectively borrowing against future tax revenues. The result in civic terms was described in Birmingham by John Thackray Bunce writing in 1878, when he claimed that:

> We now have a representative Authority united, active, and powerful, linking together parties, sects, and classes in one interest and in a common pride in municipal institutions; an Authority which is thus enabled to undertake public works such as compare not unfavourably with the memorials of municipalities of historic renown; an adequate Representation of a community great in numbers, intelligence, and wealth, caring for and promoting all that concerns its good and orderly government, its health, its intellectual culture, its material progress, and its due place and influence in the affairs alike of the locality and of the nation.[53]

The construction of the physical infrastructure of the industrial city was therefore as much a political as an architectural project. Improvements went hand in hand (and were sometimes led by) gradual processes of social change, integrating the lower classes of society into new mechanisms of governance. This was very much an experimental process: there was no existing model for how the new public services of the 'civic state' were to be effected, and, unlike the capital, in provincial cities there was no option to fall back on central government for financial support, without surrendering the still fragile independence that was a source of pride to a newly activised political class (Figure 1.14).

The governance of cities in the nineteenth century, according to Patrick Joyce, 'involved fostering … resources of things and humans so as to increase the means of subsistence, and to augment the wealth, strength and greatness of the state by increasing the happiness and prosperity of its inhabitants'.[54]

Joyce's study of life in London and Manchester was intended as 'a move away from the idea of a static and monolithic social *order* to the idea of social *ordering* as a fluid, open and many-stranded activity … what things *mean* (representation) cedes some precedence to how they *work* … [This involves] seeing the social world in terms of action or doing, in terms of practice, of … the *performance* of people, but also of things.' He describes the changes brought about by the process of 'Improvement'; the importance of 'pipes and sewers', the 'ordering of the material street (kerbs, surfaces, lamps, street signs)', and how the city 'was cleaner and better lit than ever before'.[55]

For the first time a belief that the social and environmental consequences of the Industrial Revolution could be overcome was able to prevail over seemingly insurmountable obstacles, such as widespread infectious disease, the provision of clean water and the removal of sewage, and the problem of universal education.

Improving the health of the city's population while maintaining the health of its economy became interlinked objectives that led not only to programmes of improvement at an urban scale, but also new kinds of building: museums, public libraries, and art schools. In these buildings the production of cultural and social capital was allied to the achievement of closely defined environmental objectives. The future was to be bigger, wider, more spacious, cleaner, brighter, and more efficient. It is important to have some sympathy for the scale and ambition of this civic project – as the overwhelming scale of the ills of modern life was the cause of equal measures of unbridled despair and optimism in the thought, speech, and actions of the different protagonists of the time.

Local government did not bear the financial burden alone. Benefactors (more often than not highly influential in local government) also played a key role. The Tangye brothers in Birmingham, co-owners of a large engineering firm, donated money both for the Corporation Art Gallery and the School of Art.[56] Buildings like these were designed to represent the provincial city as a centre of civilisation in its own right. As purpose-built civic institutions, the architectural design of town halls, museums, and art schools reflected new realities about the social, environmental and cultural milieu from which they emerged.

The act of display in the museum, for example, could be utilised to construct an ideal image of the urban place, contributing to a shared public expression of the town outside. There was however a tension between the desire to construct a chronological narrative of a particular place through the display of manufactured goods and historical artefacts from that city, and the desire to represent the significance of a particular city through its ability to acquire a collection of artefacts that could rival museums in other cities, as well as the national museums in London.

Similarly, the construction of art schools provided an opportunity for individual cities to capitalise on the reformation of design culture set in motion by the Great Exhibition, directing art education to

serve the interests of local industry, whether that be in metalwork, textiles, or draughtsmanship. This question of local identity was at the crux of what has been described as the struggle to 'evolve a genuine culture in the face of the more brutish aspects of mass production': the root cause and ambition of the Arts and Crafts movement.[57]

In an address outlining the 'Advantages of art and science schools' to the people of Bromley, delivered in 1878, William Farr invoked John Milton in outlining the importance of schools of art and science for the reputation of a city:

> 'Athens, the eye of Greece, Mother of Arts,'
>
> Milton thus writes of a city that, without being great, will ever be famous on account of its Schools of Art and Science. In London he saw the 'vast city' where men were 'musing, searching, revolving, new notions and ideas.' That, in his mind, was its chief glory.[58]

Farr's reference through Milton to the appeal of classical civilisation also owes a debt to the writing of Matthew Arnold.[59] In his essay, 'Sweetness and Light', Arnold professed culture to be a profoundly 'social idea' that could 'do away with classes'. For Arnold, sweetness is thought and light is beauty; ideals that civilisations such as ancient Greece and Rome always strove for:

> Culture works differently. It does not try to teach down to the level of inferior classes; it does not try to win them for this or that sect of its own, with ready-made judgments and watchwords. It seeks to do away with classes; to make the best that has been thought and known in the world current everywhere; to make all men live in an atmosphere of sweetness and light, where they may use ideas, as it uses them itself, freely, – nourished, and not bound by them.[60]

While Arnold was not prepared to propose any solutions to the dichotomy of craft versus industrial production, the Arts and Crafts movement advocated education and social action as tools for the broad improvement of the whole of society. This idea is elucidated in the writing of Ruskin's architectural disciple, William Lethaby, who promoted Schools of Arts and Crafts as 'real making shops' that, alongside galleries and museums of art, were a vital ingredient for the creation of 'local centres of civilisation'.[61]

Buildings such as museums, libraries and art schools would put the northern industrial cities on the cultural map as the century drew to a close. At the beginning of the twentieth century a succession of artists would draw inspiration from the clouds of perpetual fog hanging over their hometowns. In the longer term this cultural renaissance would also lead to new ideas about what these cities could

become. At the dawn of the twentieth century a vision of a cleaner, brighter, more *designed* future finally seemed within grasp.

Figure 1.1 Francis Fowke, Studios at South Kensington, 1863. Now part of the Victoria and Albert Museum. (Author).

Figure 1.2 George Tunstal Redmayne, Manchester School of Art, 1881. Façade to All Saints Gardens. (Author).

Figure 1.3 Chamberlain and Martin, Birmingham School of Art, 1885.

Figure 1.4 Charles Rennie Mackintosh, Glasgow School of Art, 1899. The fan room. (© Crown Copyright: HES).

Figure 1.5 Prospect of Birmingham from the South. Artist: S. T. Davis. (Birmingham Museums).

Figure 1.6 Ringelmann smoke chart. The four grids of black lines (representing in turn 20, 40, 60 and 80% blackness) were to be held at arm's length and compared in tone with the part of the sky in question. There were two aspects of the nuisance to be identified; firstly the absorption of light caused by soot held in the atmosphere, and secondly the loss of light caused indoors by the fall of soot affecting transmission through glass.

Figure 1.7 The atmosphere of the Victorian city: Ancoats, Manchester, in the 1870s. (© Manchester Libraries, Information and Archives).

Figure 1.8 Hansom and Welch, Birmingham Town Hall, 1834. Artist: Henry Harris.(Birmingham Museums).

Figure 1.9 Albert Waterhouse, Manchester Town Hall, 1878. (© The British Library Board. 10352.I.2/2).

Figure 1.10 Deansgate, Manchester, looking north, 1878. (© The British Library Board. 10352.I.2/27).

Figure 1.11 Yeoville Thomason, Birmingham Council House, 1879. The Museum and Art Gallery can be seen to the rear. Artist: B. Sly. (Birmingham Museums).

Figure 1.12 Yeoville Thomason, Birmingham Museum and Art Gallery, 1885. Artist: C. Whitwell. (Birmingham Museums).

Figure 1.13 The new public realm: Sauchiehall Street, Glasgow. Postcard, 1910.

Figure 1.14 Crowds assemble on New Street for Joseph Chamberlain's 70th birthday, 7 July 1906. (Birmingham Museums).

Table 1.1 Sums over £50,000 borrowed by the Corporation of Birmingham

Purpose	Amount expended	Originally borrowed	Repayment provided out of income	Balance owing, 31 Dec 1884
Baths	77,302	74,784	29,494	45,290
Council House	163,805	125,762	10,208	125,554
Free Libraries	78,183	77,770	8,866	68,904
Gaol	92,366	93,350	81,496	10,855
Lunatic Asylums:				
Winson Green	100,000	94,720	92,513	2,207
Rubery Hill	142,073	142,012	9,220	132,792
Market Halls etc.	220,438	222,242	73,277	148,965
Parks	62,125	64,210	14,061	50,149
Paving Carriage-ways	169,775	170,100	41,705	128,395
Paving Footways	167,499	167,754	39,418	128,336
Sewers and sanitary work	428,238	413,029	97,097	315,932
Tramways	126,648	65,450	21,489	43,961
Town Hall	69,521	69,521	38,300	31,221
Town Improvements and sundry Public Buildings	277,804	280,206	116,859	163,347
Cost of Corporation Stock	-	110,983	1,705	109,278
Total of General Loans	2,340,122	2,358,129	728,800	1,629,329

Purpose	Amount expended	Originally borrowed	Repayment provided out of income	Balance owing, 31 Dec 1884
Gasworks	2,274,095	2,377,994	217,214	2,160,780
Waterworks	1,960,045	1,930,141	10,065	1,920,076
Improvement Scheme	1,519,425	1,584,731	50,321	1,534,410
Total	8,093,687	8,250,995	1,006,400	7,244,595

Source: John Thackray Bunce, *History of the Corporation of Birmingham*, vol. 2 (Birmingham: Cornish Brothers, 1885), p. 33.

[1] The school was designed by the local firm of Bedford and Kitson, and opened in 1904, five years after the first phase of Mackintosh's school. A clever adaptation in section maximises light into the basement and first floor studios; the large windows continue beyond the soffit, and the ceiling scoops upwards to provide high level light from the side. See David Mark Boswell, 'The Architectural Practice of Bedford and Kitson' (unpublished PhD thesis, University of York, 1994), pp. 64–65.

[2] Christopher Crouch, *Design Culture in Liverpool 1888–1914: The Origins of the Liverpool School of Architecture* (Liverpool: Liverpool University Press, 2002).

[3] The Slade was founded following Felix Slade's endowment to Cambridge, Oxford and University College for three chairs of art. It is housed in the north wing of the Quadrangle of University College, completed in 1871 in the manner of William Wilkins and John Peter Gandy's Main Building of 1828. The school has large windows lighting studio spaces to the north, but is unremarkable aside from the top lit Life Room above the entrance, closely following the conservative classical language of the rest of the Quad. The Ruskin, also established in 1871, was originally housed in the existing University Galleries in Oxford, designed by Charles Cockerell and completed in 1845.

[4] Ian Hunter has argued that the idea of a single broadly defined 'cultural process' disregards the interventions in government and society that turned culture into a utilitarian commodity that could be exploited at will: 'In its place is projected the image of a general "cultural process" whereby… the actual forms of social administration responsible for making the cultural attributes of the population into an object of knowledge and government are reduced to the status of a more or less inadequate (utilitarian) "machinery" for "man's" cultural totalisation.' Ian Hunter, *Culture and Government: The Emergence of Literary Education* (London: Macmillan, 1988), p. 71.

[5] Arindam Dutta, *The Bureaucracy of Beauty: Design in the Age of Its Global Reproducibility* (Abingdon: Routledge, 2007).

[6] Isobel Armstrong has proposed a more nuanced understanding of 'glass culture', or 'the felt presence of transparency, interposed between the self and the world': 'Glass culture is at the centre of the debates of what I have called Victorian modernism – labour, political radicalism, the "free" human subject, spectacle in an industrial society'. Isobel Armstrong, *Victorian Glassworlds* (Oxford: Oxford University Press, 2008), pp. 361–362.

[7] Chris Otter, *The Victorian Eye* (London: University of Chicago Press, 2008), p. 10.

[8] Armstrong, *Victorian Glassworlds*, pp. 57, 20.

[9] Alexis de Tocqueville, *Journeys to England and Ireland* (Oxford: Transaction Publishers, 1979), p. 107.

[10] Ian Morley, *British Provincial Civic Design and the Building of Late-Victorian and Edwardian Cities, 1880–1914* (Lewiston: Edwin Mellen Press, 2008), pp. 28–29.

[11] An interesting watershed in the effect increased light and pollution was having on the city comes about mid-century, when we see evidence for the first time of star-gazers leaving for the darker skies of the countryside. Blühm and Lippincott suggest that it is 'no accident that both astronomers and artists left the cities at the same time in order to escape air and light pollution, and recapture the natural light of both the day and the night', as the advent of better light meant that industry could for the first time continue into the hours of darkness. See Andreas Blühm and Louise Lippincott, *Light!: Revolution in Art, Science and Technology, 1750–1900* (London: Thames & Hudson, 2000), p. 152.
[12] Robert Southey, *Letters from England* (New York: George Dearborn, 1836), p. 73.
[13] B. I. Coleman, 'Introduction', in *The Idea of the City in Nineteenth-Century Britain*, ed. B. I. Coleman (London: Routledge and Kegan Paul, 1973), pp. 5–7.
[14] Southey, *Letters*, p. 75.
[15] Léon Faucher, *Manchester in 1844: Its Present Condition and Future Prospects* (London: Simpkin, Marshall & Co., 1844), p. 16.
[16] Ibid., p. 16.
[17] Oriel Prizeman, 'Philanthropy and Light: The Formulation of Transatlantic Environmental Standards for Public Interiors through Andrew Carnegie's Library Building Programme, 1889-1910' (unpublished PhD, University of Cambridge, 2010), p. 185.
[18] William Nicholson was Sheffield's first official Smoke Inspector, appointed in 1890 after a popular petition calling for legal action. William Nicholson, *Smoke Abatement: A Manual for the Use of Manufacturers, Inspectors, Medical Officers of Health, Engineers, and Others* (London: Griffin, 1905).
[19] Dean Hawkes, *Architecture and Climate: An Environmental History of British Architecture, 1600–2000* (Abingdon: Routledge, 2012), pp. 129–30.
[20] H. H. Kimball, 'The Meteorological Aspect of the Smoke Problem', *Monthly Weather Review*, 42 (1914), pp. 29–34.
[21] Charles Dickens, *Hard Times* (London: Bradbury & Evans, 1854), pp. 26–27.
[22] Ibid., p. 27.
[23] Ibid., pp. 27–28.
[24] John Ruskin, *The Works of John Ruskin*, ed. by Edward Tyas Cook and Alexander D. O. Wedderburn, Library Edition (London: George Allen; Longmans, Green, and Co., 1903), XIX, pp.19–24.
[25] Ruskin, *Works*, XXVII, p. 159.
[26] Ruskin, 'The Eagle's Nest', XXII, p. 198.
[27] Thomas Carlyle, *Past and Present* (Gloucester: Dodo Press, 2007), p. 3.
[28] B. Edwards, 'Glasgow Improvements, 1866–1901', in *Glasgow: The Forming of the City*, ed. by Peter Reed (Edinburgh: Edinburgh University Press, 1993), p. 84.
[29] GULSC: Robert Perry, *Facts and Observations on the Sanitary State of Glasgow* (Glasgow: Gartnavel Press, 1844).
[30] 'Evidence House of Lords, Group G', v. 18, House of Lords Record Office, in B. Edwards, p. 84.
[31] Preamble to Glasgow Improvements Act, 1866, in Glasgow City Corporation, *Municipal Glasgow: Its Evolution And Enterprises* (Glasgow: Robert Gibson & Sons, 1915), p. 48.
[32] Peter Geoffrey Hall, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century* (Oxford: Wiley-Blackwell, 2007), p. 24; according to Morley, the total debt of town councils in England and Wales rose from £33.7 million in 1874–75 to £177.2 million in 1901–02. Morley, *Provincial Civic Design*, pp. 9, 38.
[33] Ibid., p. 8; see also J. N. Tarn, *Five per Cent Philanthropy: An Account of Housing in Urban Areas between 1840 and 1914* (Cambridge: Cambridge University Press, 1973).
[34] Simon Gunn, 'The Middle Class, Modernity and the Provincial City: Manchester c. 1840–80', in *Gender, Civic Culture and Consumerism: Middle-Class Identity in Britain, 1800–1940*, ed. by Alan Kidd and David Nicholls (Manchester: Manchester University Press, 1999), p. 114; Robert Fishman, *Bourgeois Utopias: The Rise and Fall of Suburbia* (New York: Basic Books, 1987), pp. 84–86.
[35] Friedrich Engels, *The Condition of the Working-Class in England in 1844* (London: George Allen & Unwin, 1892), p. 45.
[36] Peter Mandler, 'Faust Comes to Town: The "Creative Destruction" of the Victorian City' (presented at the Imagined Civities: Cities and Alternatives in the 19th Century Conference, University of Cambridge, 2012).
[37] Gunn, 'Middle Class', p. 115.
[38] Ibid., pp. 123, 117.
[39] See Cecil Stewart, *The Stones of Manchester* (London: Edward Arnold, 1956), p. 15.
[40] Simon Thurley, 'Building the Victorian City: Splendour and Squalor', English Architecture: Into the Modern World (Museum of London, 2012), p. 6. http://www.gresham.ac.uk/lectures-and-events/building-the-victorian-city-splendour-and-squalor [accessed 26 July 2013].

[41] John Thackray Bunce, *History of the Corporation of Birmingham*, 3 vols (Birmingham: Cornish Brothers, 1885), II, pp. xlii–xliv.
[42] Kate Hill, 'Thoroughly Embued with the Spirit of Ancient Greece: Symbolism and Space in Victorian Civic Culture', in *Gender, Civic Culture and Consumerism: Middle-Class Identity in Britain, 1800–1940*, ed. by Alan Kidd and David Nicholls (Manchester: Manchester University Press, 1999), p. 104.
[43] Andy Foster and Nikolaus Pevsner, *Birmingham*, Buildings of England (New Haven: Yale University Press, 2005), p. 13.
[44] Quoted in Coleman, *Idea of the City*, p. 160; Hill, 'Thoroughly Embued', p. 102 (italics author's own).
[45] The migration of wealthy industrialists to the west was further accelerated by the relocation of the University from the High Street to a new campus designed by George Gilbert Scott in Gilmorehill, then still separated from the city proper by the River Kelvin.
[46] Morley, *Provincial Civic Design*, pp. 15–16.
[47] Peter Davey, *Arts and Crafts Architecture: The Search for Earthly Paradise* (London: Architectural Press, 1980), pp. 116–38.
[48] Royal Sanitary Commission, *Second Report of the Royal Sanitary Commission* (London: H.M.S.O., 1871); see also Christine Bellamy, *Administering Central-Local Relations, 1871–1919: The Local Government Board in Its Fiscal and Cultural Context* (Manchester: Manchester University Press, 1988), p. 82.
[49] Morley, *Provincial Civic Design*, pp. 36–37.
[50] Bellamy, *Central-Local Relations*, p. 88.
[51] Morley, *Provincial Civic Design*, p. 41.
[52] Simon Gunn, *The Public Culture of the Victorian Middle Class: Ritual and Authority and the English Industrial City, 1840–1914* (Manchester: Manchester University Press, 2000), p. 4.
[53] John Thackray Bunce, *History of the Corporation of Birmingham*, 3 vols (Birmingham: Cornish Brothers, 1878), I, p. 351.
[54] Patrick Joyce, *The Rule of Freedom: Liberalism and the Modern City* (London: Verso, 2003), p. 3.
[55] Joyce, *Rule of Freedom*, pp. 6, 10–11.
[56] Hill, 'Thoroughly Embued', p. 101.
[57] Leonardo Benevolo, *History of Modern Architecture* (Cambridge, MA: MIT Press, 1977), p. 22.
[58] William Farr, *Advantages of Art and Science Schools: Address* (London: Edward Stanford, 1878), p. 3.
[59] Arnold was appointed Professor of Poetry at Oxford in 1857, where his lectures would eventually evolve into 'Culture and Anarchy', a seminal text first published as a series of articles in *Cornhill Magazine* in 1867 and 1868. Matthew Arnold, *Culture and Anarchy and other writings*, ed. Stefan Collini (Cambridge: Cambridge University Press, 1993). Stefan Collini, 'Introduction to Culture and Anarchy', in *Culture and Anarchy and other writings*.
[60] Matthew Arnold, 'Sweetness and Light', in *Culture and Anarchy and Other Writings*, p. 79.
[61] W. R. Lethaby, *Form in Civilization; Collected Papers on Art and Labour* (London: Oxford University Press, H. Milford, 1922), pp. 29–30, 181–82.